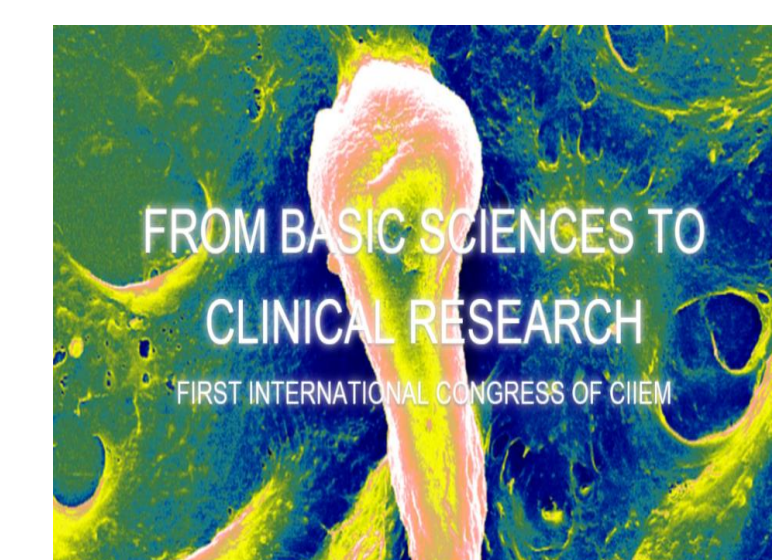


Towards a healthy and safe jellyfish snack

Preliminary assay with allergic patients



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Introduction

Jellyfish consumption is increasing in Europe [1]. *Catostylus tagi* is an edible jellyfish native of the Portuguese coast which presents *in vitro* antioxidant and antihypertensive effects. In this experiment, we prepared *C. tagi* as a snack and tested it on patients with severe seafood (fish, crustacean and/or cephalopods) allergy.

Methods

C. tagi sampling, procedures for snack paste and for skin prick-to-prick tests (SPPT)

Exemplars were caught at Tejo estuary. Initial preparation assays were based on Awong *et al* [2] and optimized latter [3]. Twelve hours before consumption the deep frozen umbrellas without nematocytes were transferred to a -20°C freezer for 8 hours and then cut into cubes. The sliced sample was cooked in a microwave oven and reduced to 15% of its initial weight (Fig I).

Two pastes were made with cooked *C. tagi* mixed with mayonnaise at 5% and 10% w/w. The snack pastes were prepared a few minutes before consumption.

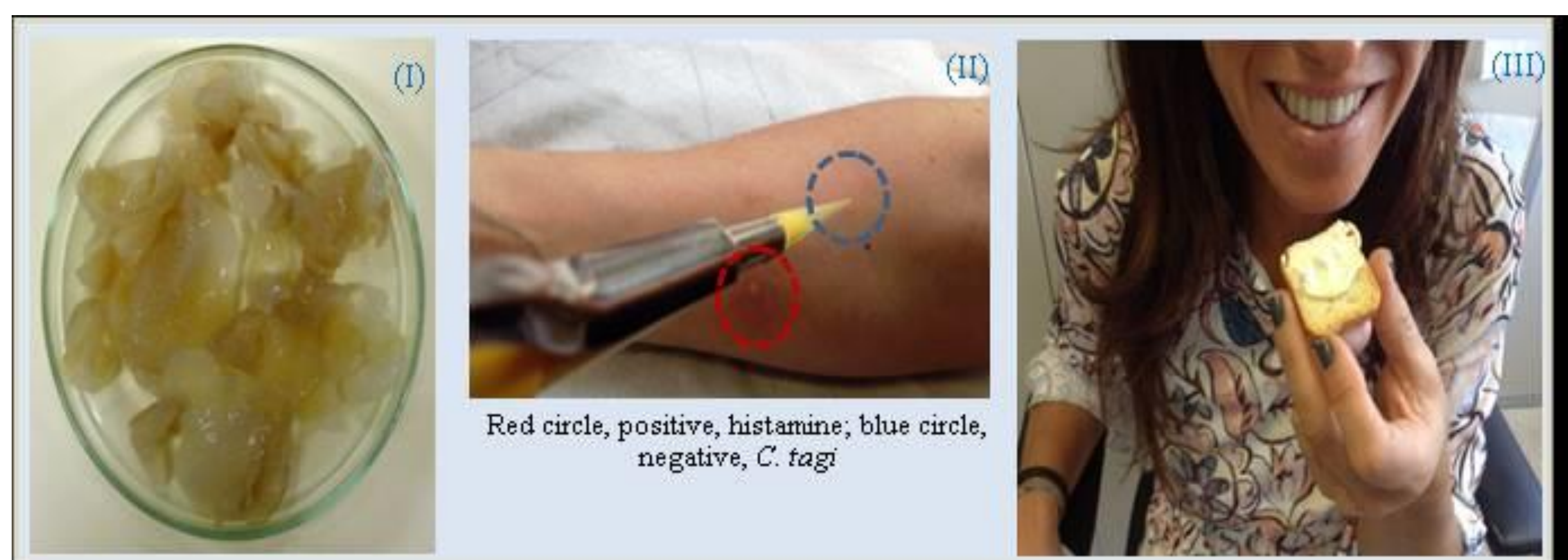
Sample for SPPT was prepared 8-12 h before utilization by mechanical trituration of frozen crude umbrella to a liquid state, without dilution, and kept at 4°C. In this condition, the sample has a protein content of about 0.2% w/w.

Allergen assay

Ten subjects, allergic to fish, crustacean and/or cephalopods, volunteered to participate in this trial. Skin prick tests with the crude umbrella of *C. tagi* were performed according to European standards (Fig. II). The results were recorded after 15 minutes. Histamine 10 mg/mL served as a positive control and a saline solution as a negative control. Those with negative SPPT were then invited to undergo an oral challenge with snacks of *C. tagi*. (Fig. III). The volunteers tasted the snack sample 1 and after 15 minutes, if no reactions were recorded, sample 2. Upon completion of sensory analysis, a 9 point hedonic scale was applied, as well as a small questionnaire. The ethics research committee approved the study and signed informed consent was obtained from all subjects.

Results and Discussion

All ten allergic patients had negative skin tests with crude *C. tagi*. All volunteers agreed to taste both snacks and no immediate or delayed reactions occurred. The tasters scored samples 1 and 2 an average of 6 and 7 respectively. Nine out of ten subjects were willing to introduce *C. tagi* in their diet.



Figure

- (I) Cooked *C. tagi* umbrella;
- (II) Skin prick-to-prick tests with crude *C. tagi* in a seafood allergic patient;
- (III) Sensory evaluation of *C. tagi* snack by a crustacean allergic patient.

Conclusion

These preliminary results are encouraging and further studies with a larger sample of allergic patients are now in progress.

References:

- [1] Boero F. (2013) *Studies and Reviews. General Fisheries Commission for the Mediterranean*. Nº 92. FAO, Rome, 53 p.
- [2] Awong H. et al (2010). *Borneo Research Journal* **4**: 59.
- [3] Morais Z. & Raposo A. (2014). *Boletim da Propriedade Industrial* **12**: 37.

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